Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) An apparatus for displaying image, said apparatus comprising:

an acquisition part configured to collect CT or MR head image data of a person being examined;

a tomogram forming part configured to form a tomogram from said CT or MR head image data;

an analysis part configured to calculate at least one biological function data in said tomogram, formed based on said CT or MR head image data, regarding temporal changes in values of the same pixels or section of an organ with passage of time;

a functional image forming part configured to form ~~at least one functional image~~ two or more functional images based on said biological function data;

a composite image forming part configured to form a composite image by composing said tomogram and ~~at least one of the following images: an operated image obtained by performing an inter-image operation on said functional images together;~~ a blended image obtained by composing two or more ~~of said operated image and~~ portion images extracted from said functional images ~~together~~; and

a display part configured to display ~~said functional image, said operated image,~~ said tomogram and said ~~composite~~ blended image, overlapping each other;

wherein said two or more portion images extracted from said functional images have different respective gradation colors, as compared to each other, and are overlapped in display

~~at least portions of the regions in said functional image and in said operated image are displayed using different gradation color scales corresponding to the evaluated value of said biological function data, and other regions in said function image and in said operated image are displayed in an arbitrary color which is not included in said gradation color scales, or are displayed transparently, and said portions of the regions in the functional image are displayed by an overlapped display~~.

2. (previously presented) An apparatus according to claim 21, wherein said composite image is displayed by any one of a parallel display or a partial display.

3. (previously presented) An apparatus according to claim 21, wherein said functional image forming part sets to zero a ratio of said functional image in other regions in said functional image.

4. (currently amended) An apparatus according to claim 21, wherein said functional image forming part arbitrarily varies the gradation color [[scale]] allocated to said biological function data.

5. (previously presented) An apparatus according to claim 21, wherein said functional image forming part arbitrarily set ratios of the functional images in said composite images and of said tomogram.

6. (previously presented) An apparatus according to claim 21, wherein said functional

image forming part specifies part of the regions in said functional image depending upon whether the image data value of said pixel unit lies inside or outside a predetermined range.

7. (previously presented) An apparatus according to claim 21, wherein said functional image forming part determines an arbitrary interested region in said functional image as region of interest in said functional image.

8. (currently amended) An apparatus according to claim 21, wherein said functional image forming part renders the pixel values of the pixels of the image data on a predetermined display window value level and in a predetermined display window width to be corresponded to conversion coefficients, and determines said gradation color [[scale]] based on the conversion coefficients.

9. (currently amended) An apparatus according to claim 8, wherein said functional image forming part determines the gradation color [[scale]] allocated to said functional image depending upon the pixel values of the pixels of the image data for each of RGB and upon various look-up tables to which the conversion coefficients are corresponded.

10. (previously presented) An apparatus according to claim 21, wherein said biological function data is at least one of the blood flow function data as represented by blood volume, blood flow and mean transit time.

11. (currently amended) A method of displaying image, said method comprising:

a step of collecting CT or MR head image data of a person being examined;

a step of forming a tomogram from said CT or MR head image data;

a step of calculating at least one biological function data in said tomogram, formed based on said CT or MR head image data, regarding temporal changes in values of the same pixels or section of an organ with passage of time;

a step of forming ~~at least one functional image~~ two or more functional images based on said biological function data;

a step of ~~forming an operated image by operating said function images together, for~~ forming a composite image by composing said tomogram and ~~at least one of the following images: an operated image obtained by operating said functional images together; a composite~~ a blended image obtained by composing ~~said functional images together, said operated image, and~~ portion images extracted from said functional image; and

a display step of displaying ~~said functional image, said operated image,~~ said tomogram and said ~~composite~~ blended image, overlapping each other;

wherein said two or more portion images extracted from said functional images have different respective gradation colors, as compared to each other, and are overlapped in display, ~~at least portions of the regions in said functional image and in said operated image are displayed using different gradation color scale~~ the respective gradation colors of the two or more portion images corresponding to the evaluated value of said biological function data, and

other regions in said functional images ~~image and in said operated image~~ are displayed in an arbitrary color different form the respective gradation colors of the two or more portion images ~~which is not included in said gradation color scales~~, or are displayed transparently~~, and said portions of the regions in the functional image are displayed by an overlapped display~~.

Claim 12 (canceled).

13. (previously presented) A method of displaying image according to claim 11, wherein the step of forming said functional image sets to zero the ratio of said functional image in other regions in said functional image.

14. (currently amended) A method of displaying image according to claim 11, further comprising arbitrarily varying the gradation color [[scale]] allocated to said biological function data image.

15. (previously presented) A method of displaying image according to claim 11, further comprising arbitrarily setting the ratios of the functional images in said synthetic images and of said tomogram.

16. (currently amended) A method of displaying image according to claim 11 [[12]], wherein the step of forming said functional image specifies part of the regions in said functional image depending upon whether the image data value of said pixel unit lies inside or outside a predetermined range.

17. (currently amended) A method of displaying image according to claim 11 [[12]], wherein the step of forming said functional image determines an arbitrary interested region in said functional image as region of interest in said functional image.

18. (currently amended) A method of displaying image according to claim 11, wherein the step of forming said functional image renders the pixel values of the pixels of the image data on a predetermined display window value level and in a predetermined display window width to be corresponded to conversion coefficients, and determines said gradation color [[scale]] based on the conversion coefficients.

19. (currently amended) A method of displaying image according to claim 18, wherein the step of forming said functional image determines the gradation color [[scale]] allocated to said functional image depending upon the pixel values of the pixels of the image data for each of RGB and upon various look-up tables to which the conversion coefficients are corresponded.

Claim 20 (canceled).

21. (currently amended) A functional image display apparatus comprising:

an acquisition part configured to collect CT or MR head image data of a person being examined;

a tomogram forming part configured to form a tomogram from the CT or MR head image data;

an analysis part configured to calculate at least one biological function data in said tomogram, formed based on said CT or MR head image data, regarding temporal changes in values of the same pixels or section of an organ with passage of time;

a functional image forming part configured to form ~~at least one functional image~~ two or

more functional images based on the biological function data;

a composite image forming part configured to form a composite image by composing the tomogram and ~~at least one of the functional image, an operated image obtained by performing an inter-image operation on a plurality of functional images, and~~ a blended image obtained by composing portion images extracted from the functional images ~~together~~; and

a display part configured to display ~~the functional image, the operated image,~~ the tomogram and the ~~composite~~ blended image, overlapping each other;

wherein said two or more portion images extracted from said functional images have different respective gradation colors, as compared to each other, and are overlapped in display, ~~at least portions of regions in the functional image and in the operated image are displayed using different gradation color scales~~ the respective gradation colors of the two or more portion images corresponding to the evaluated value of the biological function data; and

wherein other regions in the functional images ~~image and in the operated image~~ are displayed in an arbitrary color different form the respective gradation colors of the two or more portion images ~~which is not included in the gradation color scales~~, or are displayed transparently~~, and wherein the portions of the regions in the functional image are displayed by an overlapped display~~.

22. (previously presented) The functional image display apparatus of claim 21, wherein the biological function data is perfusion data of brain tissue.

23. (new) An apparatus according to claim 1, wherein said composite image forming part is configured to form a composite image by composing said tomogram and an operated image

obtained by performing an intra-image operation on said functional images together.